

REMARKS

Applicants would like to thank the Examiner for careful consideration of this application.

Claims 8 and 17-27 are pending in this application. The Examiner has found allowable subject matter in Claims 23-26. Therefore, Claims 23 and 26 have been amended to place them in independent form. Accordingly, Claims 23-26 are in condition for allowance. Support for all amendments can be found in the specification as originally filed. No new matter has been added.

Double patenting

Claims 8 and 17-27 stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claims 1-12 of U.S. Pat. No. 6,642,302 to Wamprecht et al.

Applicants respectfully traverse this ground of rejection. However, a terminal disclaimer in compliance with 37 CFR 1.321(c) is attached hereto. Accordingly, Applicants request withdrawal of this ground of rejection.

Rejection Under 35 USC 103

Claims 8, 17-22 and 27 stand rejected under 35 USC 103 over WO 96/30425 to Martz et al. (hereinafter "Martz") and, independently, over U.S. Pat. No. 5,023,309 to Kruse et al. (hereinafter "Kruse").

It is well settled that to establish a *prima facie* case of obviousness, the USPTO must satisfy all of the following requirements. First, the prior art relied upon, coupled with the knowledge generally available in the art at the time of the invention, must contain some suggestion or incentive that would have motivated the skilled artisan to modify a reference or to combine references. *In re Fine*, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). Second, the proposed modification must have had a reasonable expectation of success, as determined from the vantage point of one of ordinary skill in the art at the time the invention was made. *Amgen v. Chugai Pharmaceutical Co.* 18 USPQ 2d 1016,

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1023 (Fed Cir, 1991), *cert. denied* 502 U.S. 856 (1991). Third, the prior art reference or combination of references must teach or suggest all of the limitations of the claims. *In re Wilson*, 165 USPQ 494, 496, (CCPA 1970).

The disclosure of Martz is directed to an aqueous two-component polyisocyanate coating that is the reaction product of an isocyanate with an isocyanate free emulsifier such as hydroxyl functional polyalkyl ethers, alcohols different than polyalkyl ethers and amine compounds.

Similarly, Kruse teaches a water dispersible, modified polyurethane which is the reaction product of polyisocyanate, polyether polyol, modifying agent that can be an amine, acid or alcohol, and a capping agent. The polyurethanes of Kruse are directed to a modified polyurethane which increases the high shear viscosity of an aqueous composition.

However, both Martz and Kruse fail to teach or suggest a mixture of polyether polyols with average functionality of ≥ 3 and polyetherpolyols with average functionality of ≥ 4 as recited in component A) of independent Claim 8, and therefore, do not teach or suggest all of the limitations of independent Claim 1.

In his discussion of component A of independent Claim 8, the Examiner states that "statistically, two of these polyether polyols will be joined by a diisocyanate in the final polyurethane of the reference" creating "a tetrol polyurethane polyether moiety" that would "read on the instantly claimed component a2". Within this statement, the Examiner is asserting that placing polyisocyanates and polyether polyols in the same reaction is equivalent to preparing a mixture of polyether polyols by performing a partial reaction of up to 50 mole % of polyether polyols with an average functionality of ≥ 3 with isocyanates with an average functionality of ≥ 2 , and any polyether polyol that is encompassed by either Martz or Kruse that is combined with polyisocyanate in a polymerization reaction is equivalent to component A) of independent Claim 8. The Examiner is reminded that in order to rely on equivalence as a rationale supporting an obviousness rejection, the equivalency must be recognized in the prior art, and cannot be based on Applicant's disclosure or the mere fact that the components at issue are

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functional or mechanical equivalents. *In re Ruff*, 256 F.2d 590, 118 USPQ 340 (CCPA 1958). Clearly, a polyether polyol of single functionality is not equivalent to a mixture of polyether polyol with average functionality of ≥ 3 and ≥ 4 recited in component A) of independent Claim 8. While statistically there may be a number of polyether polyols that are joined to form polyether polyols with functionality of ≥ 4 in a reaction containing polyether polyol and polyisocyanates, the object of component A) is a mixture containing ≤ 50 mole % polyether polyols with average functionality ≥ 4 , the necessary consequence of reacting up to 50 mole % polyether polyols with average functionality of ≥ 3 with polyisocyanates. Reactions such as those alluded to by the Examiner would produce only a fraction of polyether polyols with average functionality of ≥ 4 described in independent Claim 8. Therefore, the Examiners assertion that any mixture containing polyether polyols and isocyanates, including those mixtures containing other components, will produce the same mixture of polyether polyols with an average functionality of ≥ 3 and polyether polyols with an average functionality of ≥ 4 that is produced by the partial reaction, is incorrect.

Furthermore, neither Martz nor Kruse provide any teaching or suggestion that would make it obvious to one of ordinary skill in the art to prepare a mixture of polyether polyols recited in component A) of independent Claim 8 to produce a polyurethane thickener with improved high shear viscosity. No where in the disclosures of either Martz or Kruse is the additional step in the producing of polyurethanes of preparing a polyether polyol mixture with an average functionality of ≥ 3 and ≥ 4 by a partial reaction of up to 50 mole % of polyether polyols with an average functionality of ≥ 3 with isocyanates with an average functionality of ≥ 2 taught or suggested, nor would it be obvious from the disclosures of Martz or Kruse to use such a mixture to increase the high shear viscosity of the polyurethane thickener.

Clearly, the polyurethane of independent Claim 8 encompasses a mixture of polyether polyols as recited in component A) and a process for preparing this mixture that are not taught or suggested by Martz or Kruse, and, therefore, the cited references fail to teach or suggest all of the limitation of independent Claim 8. The rejections

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based on these references should be withdrawn. Reconsideration is respectfully requested.

Moreover, the Examiners assertion that the disclosure of "Martz encompasses the instantly claimed component A being within the final polyurethane" is incorrect. Examples of polyurethanes as described in independent Claim 8 are provided in the specification as Examples 3-18, and the viscosities of these examples are provided in Table 1. The average viscosity at low shear for these Examples is 1774 mPa.s. Martz provides a single example of a polyurethane that is similar to the polyurethane thickener recited in present independent Claim 8 in Example B. The viscosity of this polyurethane is reported to be 1010 cps (1 mPa.s = 1 cps). While the references do not test their compositions at high shear, the average viscosity of the present claimed invention is considerably better than the viscosity of Example B of Martz indicating that these compositions are not equivalent.

The disclosure of Kruse includes viscosities for Examples 1-11 at high shear rate ($10,000\text{ s}^{-1}$), and the examples for which ICI viscosities provided have an average viscosity of 1.7 poise. Viscosities for Examples 3-18 of the present claimed invention are also provided in the specification and provide an average viscosity of 2.8 poise at high shear rate ($10,000\text{ s}^{-1}$). Therefore, the viscosity of the present claimed invention is considerably better than the viscosity of polyurethanes as described by Kruse at high shear rate indicating that the polyurethanes of independent Claim 8 are fundamentally different than those of Kruse.

Accordingly, the polyurethane thickeners of independent Claim 8 display improved viscosity over the cited references. Consequently, the polyurethane thickener recited in independent Claim 8 encompasses different properties than those of either Martz or Kruse, and neither Martz nor Kruse encompass the polyurethanes of the present claimed invention and, therefore, cannot render independent Claim 8 obvious.

Accordingly, Martz and Kruse fail to teach or suggest all of the limitations of independent Claim 8, provide no motivation to one of ordinary skill in the art to modify the disclosure of either Martz or Kruse to make the Applicants' invention, and produces

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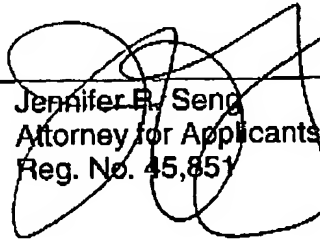
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polyurethanes that display different properties than those of independent Claim 8. Therefore, neither Martz nor Kruse can be used as the basis of a rejection under 35 USC 103(a). Reconsideration is respectfully requested.

Applicants believe that in view of the amendments and remarks made herein this application is in condition for allowance. Reconsideration and allowance is respectfully requested.

Respectfully submitted,

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